

06/15/015 Incoming
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EarthFax

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March 22, 2012

Steve Christensen
Permit Supervisor
Utah Division of Oil, Gas and Mining
Coal Program
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, UT 84114-5801

Subject: Emery Mine Permit
Groundwater monitoring plan revision
Additional information
Task ID #3898

Dear Mr. Christensen:

At the request of Consolidation Coal Company, I am pleased to submit three hard copies and two CDs with electronic versions of documents addressing the above matter. This submittal also includes executed C1 and C2 forms.

If you have any questions concerning this submittal, please contact John Gefferth at 618-625-6850. Thank you for your assistance.

Sincerely,

Richard B. White, P.E.
President
EarthFax Engineering, Inc.

Enclosure

Cc: John Gefferth

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Incoming

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Consolidation Coal Company

Mine: Emery Mine

Permit Number: 015/015

Title: Groundwater Monitor revision

Description, Include reason for application and timing required to implement:

Revision to Groundwater monitoring plan additional information Task id 3898

3/12

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- ☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
- ☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
- ☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
- ☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
- ☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
- ☐ Yes ☒ No 6. Does the application require or include public notice publication?
- ☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
- ☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
- ☒ Yes ☐ No 9. Is the application submitted as a result of a Violation? NOV # 10088
- ☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
- Explain: _____
- ☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
- ☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
- ☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
- ☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
- ☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
- ☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
- ☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
- ☒ Yes ☐ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
- ☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
- ☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
- ☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
- ☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
- ☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein

MARK T. STANLEY
Print Name

[Signature]
Sign Name, Position, Date

Subscribed and sworn to before me this 16th day of MARCH, 2012

Janice L. Davis
Notary Public

My commission Expires: October 19, 2013
Attest: State of Pennsylvania } ss:
County of Allegheny

NOTARIAL SEAL
JANICE L DAVIS
Notary Public
CECIL TWP., WASHINGTON COUNTY
My Commission Expires Oct 19, 2013

For Office Use Only:

Assigned Tracking
Number:

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APPLICATION FOR COAL PERMIT PROCESSING

Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Consolidation Coal Company

Mine: Emery Mine

Permit Number: 015/015

Title: Revision to groundwater monitoring plan, additional information, Task ID #3898

3/12

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED

[illegible]

Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.

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2. Ephemeral streamflow typically carries a high sediment load. This sediment will fill remaining cracks. As the cracks heal, the potential for interception of streamflow is minimized.
3. The depressions created by subsidence are sufficiently broad that changes in slope are not typically of an ample magnitude to cause ponding in anything other than local areas.

Potential Hydrocarbon Contamination. Diesel fuel, oils, greases, and other hydrocarbon products are stored and used at the site for a variety of purposes. Diesel and oil stored in above-ground tanks at the mine surface facilities may spill onto the ground during filling of the storage tank, leakage of the storage tank, or filling of the vehicle tank. Similarly, greases and other oils may be spilled during use in surface and underground operations.

The probable future extent of the contamination caused by diesel and oil spillage is expected to be small for three reasons. First, because the tanks are located above ground, leakage from the tanks can be readily detected and repaired. Second, spillage during filling of the storage or vehicle tanks is minimized to avoid loss of an economically valuable product. Finally, the mine has a Spill Prevention Control and Countermeasure Plan that provides inspection, training, and operation measures to minimize the extent of contamination resulting from the use of hydrocarbons at the site.

Motor oil was introduced into some of the monitoring wells several years ago for reasons that are not clear. An investigation of this issue, conducted in January 2012, concluded that this oil is not causing substantial contamination of the monitored aquifers (see Appendix VI-18).

Coal Spillage During Hauling. Coal is hauled over County roads from the mine to State Highway 10 and future destinations. Past experience has indicated that no substantial quantities of coal have been spilled during transport. If coal is spilled, it may wash into local streams during a runoff event prior to cleanup. Possible impacts to the surface water include increases in total suspended solids and turbidity from the fine coal particulates. The probability of a spill occurring in an area sufficiently close to a stream channel to introduce coal to the stream bed is extremely small.

Areal Extent of Probable Hydrologic Consequences. The above discussion indicates that the probable hydrologic consequences of mining at the Emery Mine will be limited in areal extent as follows:

- Contamination from acid- and toxic-forming materials – Very limited areal extent of impact, if any.
- Increased sediment yield from disturbed areas – No impacts downstream from disturbed areas.
- Impacts to groundwater availability – Drawdown of the groundwater potentiometric surface due to mine dewatering may extend northward to an area south of the Emery Town wells, westward to the Joe's Valley-Paradise Fault Zone, eastward to the area of Muddy Creek, and southward to an area north of Ivie Creek.
- Impacts to surface water availability – Increased flow in Quitchupah Creek and immediate downstream portions of Ivie Creek.
- Increased total dissolved solids concentrations in surface and groundwater – Slight increase in TDS concentrations in Quitchupah Creek and immediate downstream portions of Ivie Creek. Temporary increase in TDS concentrations in the upper Ferron Sandstone adjacent to the mine.
- Flooding and streamflow alteration – Very limited areal extent of impact, if any.
- Potential hydrocarbon contamination – Very limited areal extent of impact, if any.
- Coal spillage during hauling – Very limited areal extent of impact, if any.

channeled to sedimentation ponds. All surface drainage from the areas above the sites is diverted around the disposal areas using diversion ditches. No permanent impoundments will exist on the completed refuse piles.

VI.4.6.3 Impounding Structures

There are no impounding structures within the permit area that are constructed of coal mine waste or are used to impound coal mine waste.

VI.4.6.4 Return of Coal Processing Waste to Underground Workings

Coal processing waste is not returned to abandoned underground workings at this mine.

VI.4.7 Disposal of Noncoal Mine Waste

Disposal of noncoal mine waste is discussed in Chapter II.

VI.4.8 Casing and Sealing of Wells

Each monitoring well or other borehole associated with the Emery Mine has been cased, sealed, or otherwise managed, as approved by the Division, to prevent acid or other toxic drainage from entering ground or surface water, to minimize disturbance to the hydrologic balance, and to ensure the safety of people, livestock, fish and wildlife, and machinery in the permit and adjacent area. The drill logs and completion diagrams for the water wells are contained in Appendix VI-2.

If a water well is exposed by coal mining and reclamation operations, it will be permanently closed unless otherwise managed in a manner approved by the Division [\(see Section VI.6.5\)](#).

VI.5 PERFORMANCE STANDARDS

All mining and reclamation operations will be conducted to minimize disturbance to the hydrologic balance within the permit and adjacent areas, to prevent material damage to the hydrologic balance outside the permit area, and support approved post-mining land uses.

VI.5.1 Water Quality Standards and Effluent Limitations

Discharges of water from disturbed areas will be in compliance with all Utah and Federal water quality laws and regulations and with effluent limitations for coal mining contained in 40 CFR Part 434.

VI.5.2 Sediment Control Measures

All sediment control measures will be located, maintained, constructed and reclaimed according to plans and designs presented in Sections VI.3.2, VI.4.2, and VI.6.

VI.5.2.1 Siltation Structures and Diversions

Siltation structures and diversions will be located, maintained, constructed and reclaimed according to plans and designs presented in Sections VI.3.2, VI.4.2, and VI.6.3.

VI.6.2.1 Restoring the Natural Drainage Patterns

All natural drainage patterns will be restored during reclamation.

VI.6.2.2 Reshaping Cut and Fill Slopes

All cut and fill slopes will be reshaped to be compatible with the post-mining land use and to complement the drainage pattern of the surrounding terrain.

VI.6.3 Siltation Structures

VI.6.3.1 Maintenance of Siltation Structures

All siltation structures will be maintained until removed in accordance with the approved reclamation plan.

VI.6.3.2 Removal of Siltation Structures

When a siltation structure is removed, the land on which the siltation structure was located will be regraded and revegetated in accordance with the reclamation plan presented in Chapter III.

VI.6.4 Structure Removal

A timetable for the removal of each structure is presented in Section III.A.2 of this MRP.

VI.6.5 Permanent Casing and Sealing of Wells

When no longer needed for monitoring or other use approved by the Division upon a finding of no adverse environmental or health and safety effects, or unless approved for transfer as a water well, each monitoring well or borehole associated with the Emery Mine will be capped, sealed, backfilled, or otherwise properly managed, as required by the Division and in accordance with the most current regulations concerning well abandonment as promulgated by the Utah Division of Water Rights. Permanent closure measures will be designed to prevent access to the mine workings by people, livestock, fish and wildlife, machinery and to keep acid or other toxic drainage from entering ground or surface waters.

Revised 03/12

TABLE VI-17

Emery Mine Hydrologic Monitoring Program

Parameter	Surface Water Monitoring Stations	Sampled Wells	Other Wells	Springs/Seeps	UPDES Outfalls
Monitoring Site Names	SWMS-1A, SWMS-2, SWMS-3, SWMS-4, SWMS-5, SWMS-8, SWMS-9, SWMS-10	Bryant , Emery Town ^(a) , I-2 , Lewis , Kemmerer, RDA-1 , RDA-2, RDA-3 , RDA-4, RDA-5 , RDA-6, SM1-2 , SM1-3, SM1-4 , T1, TP , USGS1-2 , USGS3-1 , USGS4-1	AA , EMRIA #1 , EMRIA #2 , FC346WW , H-U , + , MUDDY #1, MUDDY #2 , MUDDY #4 , R-1, R-2 , SM1-1 , T2 , WW1	SP-10, SP-11, SP-13, SP-14, SP-15	001, 002, 003, 004, 005, 006, 007, 009
Monitoring Frequency	Quarterly	Quarterly, except RDA wells (annual)	Quarterly	Quarterly flows. Samples in 2 nd and 3 rd quarters	Per permit
Field Measurements					
Flow	X			X	X
Water Level		X	X		
pH (field)	X	X		X	X
Sp. Cond. (field)	X	X		X	
Water Temp. (field)	X	X		X	
Laboratory Measurements					
Total Settleable Solids	X				
Total Suspended Solids	X				X
Total Dissolved Solids	X	X		X	X
Total Hardness (as CaCO ₃)	X	X		X	
Oil and Grease	X				X
Acidity (as CaCO ₃)	X				
Carbonate	X	X		X	
Bicarbonate	X	X		X	
Alkalinity (as CaCO ₃)					
Calcium, Total	X				
Calcium, Dissolved	X	X		X	
Chloride	X	X		X	
Iron, Total	X				X
Iron, Dissolved		X		X	
Magnesium, Total	X				
Magnesium, Dissolved		X		X	
Manganese, Total	X				
Manganese, Dissolved		X		X	
Potassium, Total	X				
Potassium, Dissolved		X		X	
Sodium, Total	X				
Sodium, Dissolved		X		X	
Sulfate		X		X	

^(a) Due to physical limitations in the Emery town wells (see text), water-quality samples will be collected from Well #1 and water-level data will be collected from Well #2. Consol will evaluate data collected from the Emery town wells, using hydrographs and other appropriate means, and submit a report of findings to DOGM ~~on a semiannual basis~~ with the annual report.

Add the attached letter to the back of Appendix VI-17.



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March 12, 2012

Mr. John Gefferth
Director, Coal Permitting
Consolidation Coal Company
P.O. Box 566
Sesser, IL 62884-0566

Subject: Emery Mine Monitoring Well R2

Dear John:

On August 22, 2011 I issued a letter outlining recommendations for future groundwater monitoring at the Emery Mine. In that letter, I recommended that some of the wells be dropped from further monitoring due to the presence of oil in the wells. The Utah Division of Oil, Gas and Mining then requested that additional investigations be conducted to assess the nature and chemical composition of the oil in the wells.

One of the wells that we investigated was R-2U, located near the west-central portion of the mine-plan area. This well is completed with nominal 1-inch diameter steel casing to a depth of approximately 550 feet. During this investigation, we lowered a 1/2-inch diameter bailer into the well, which became stuck in the well. Significant effort to retrieve this bailer proved ineffective and it became necessary to leave the bailer in the well. Hence, it is no longer possible to measure water levels in this well.

Given this condition, we recommend that monitoring well R-2U be dropped from the list of hydrologic monitoring locations at the Emery Mine.

Please contact me if you have any questions.

Sincerely,

Richard B. White, P.E.
President
EarthFax Engineering, Inc.

APPENDIX VI-18

**Evaluation of Oil in
Emery Mine Monitoring Wells**

March 12, 2012



EarthFax

Mr. John Gefferth
Director, Coal Permitting
Consolidation Coal Company
P.O. Box 566
Sesser, IL 62884-0566

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Subject: Evaluation of Oil in Emery Mine Monitoring Wells

Dear John:

Pursuant to your request, we have conducted an evaluation of oil in selected monitoring wells at the Emery Mine. The purpose of this evaluation was to address comments from the Utah Division of Oil, Gas and Mining regarding the extent and magnitude of potential hydrocarbon contamination of aquifers at the Emery Mine.

Attachment A presents historic water-level data collected from monitoring wells at the Emery Mine. This table indicates that some of the wells experienced probe-access problems beginning in 2001. With a few of the wells experiencing repeated problems, the decision was made by Mine personnel to pour motor oil into these wells in an attempt to allow easier movement of the probe down the well casing. Unfortunately, this made the collection of future water-level data in those wells difficult since oil would coat the probe and not allow a conductive connection to be made with the water surface. Furthermore, due to cross contamination, it appears that a small amount of oil was introduced into a few of the other wells within the Mine's hydrologic monitoring network. As a result, the monitoring data base indicates that the following groundwater monitoring wells at the Emery Mine (see Figure 1) have occasionally been reported as having oil on the water surface:

- AA-U, AA-M
- H-U, H-M, H-L
- I-B, I-M, I-L
- R2-U
- Lewis

In some cases, the record indicates that oil was present on several occasions. In other cases, the record is sporadic in its indication of oil being present. Except for the Lewis well, each of the above wells is completed with nominal 1-inch diameter galvanized steel casing. The Lewis well is a former private water-supply well that has been abandoned.

To verify the presence or absence of oil in the above wells, we conducted the following investigation:

- Lowered an electronic water-level indicator probe into each well to determine if a water-level measurement could be collected. Upon retrieval, the probe was examined to determine if any oil had collected on the probe or the attached measuring tape.

- Lowered a 1/2-inch diameter polyethylene, disposable, weighted bailer into each well to a depth that intersected the water level. Retrieved the bailer from the well and observed the bailer for indications of the presence of oil (i.e., odor, presence of free oil in the bailer, oil on the surface of the bailer, etc.).
- Sampled the liquids in the bailer. If free oil was present in the bailer, a separate sample of this material was collected. Water samples were analyzed by American West Analytical Laboratories in Salt Lake City, Utah for benzene, ethylbenzene, naphthalene, toluene, and total xylenes. Oil samples were analyzed by Savant, Inc. in Midland, Michigan for kinematic viscosity, simulated distillation by gas chromatography, and elemental analysis by ICP.

General observations made during the field investigation are summarized in Table 1. As indicated, three wells (AA-M, H-M, and H-L) contain noticeable quantities of oil on the water surface, although the exact thickness of oil was difficult to measure because of the small diameter of the wells. Well R2-U may have also contained a noticeable quantity of oil, but the bailer used to sample the oil became stuck in the well during this investigation, making quantification impossible.

The results of laboratory analyses of samples collected during this investigation are summarized in Tables 2 and 3, with analytical reports provided in Attachment B. As indicated in Table 2, no constituents were measured in the groundwater at concentrations that exceeded applicable drinking-water standards. Hence, contamination of groundwater due to the presence of oil in the wells is not considered to be problematic. The results presented in Table 3 indicate that the properties of the oil are consistent with motor oil. Thus, it is apparent that this oil did not originate from a spill, a leak, or other mine operations but rather was new motor oil poured into the wells as indicated by Mine personnel.

It appears that the oil in the wells is not causing contamination of the aquifer and presents only logistical problems for the hydrologic monitoring program. Given this condition, I do not consider it necessary to take any immediate action concerning these wells, but recommend that they be abandoned at some future date in accordance with the requirements of the Utah Division of Water Rights that are then in force.

Please contact me if you have any questions.

Sincerely,



Richard B. White, P.E.
President
EarthFax Engineering, Inc.

TABLE 1

Status of Oil in Emery Mine
 Groundwater Monitoring Wells^(a)

Well	Status	Result
AA-U	Depth to water = 111 ft. No visible oil on the probe. Water sample collected for laboratory analyses. No visible oil in the bailer.	No oil in this well.
AA-M	Depth to water = 97 ft. Probe and bottom of tape was coated with oil. Oil on the tape may be due to coating of the well casing rather than oil standing in the well. Looks and smells like motor oil. Collected a sample of the oil.	Unknown quantity of oil in this well.
H-U	Depth to water = 96 ft. No visible oil on the probe. Water sample collected for laboratory analyses. No visible oil in the bailer.	No oil in this well.
H-M	Depth to water = 439 ft. Probe and bottom 200 ft of tape was coated with oil. Oil on the tape may be due to coating of the well casing rather than oil standing in the well. Looks and smells like motor oil. Bailer could not be lowered to the water surface. Collected a sample of the oil that coated the tape.	Unknown quantity of oil in this well.
H-L	Depth to water = 108 ft. Probe and bailer coated with oil. Looks and smells like motor oil. Oil appears to be about 2 to 3 ft thick.	2 to 3 ft of oil in this well.
I-B	Depth to water = 127 ft. No visible oil on the probe. Water sample collected for laboratory analyses. No visible oil in the bailer.	No oil in this well.
I-M	Depth to water = 427 ft. No visible oil on the probe. Bailer could not be lowered to the water surface.	No oil in this well.
I-L	Depth to water = 16 ft. No visible oil on the probe. Water sample collected for laboratory analyses. No visible oil in the bailer.	No oil in this well.
R2-U	Depth to water = 542 ft. Probe covered with oil. Bailer became stuck in the well during sampling attempt. Unable to determine thickness of oil in the well. Looks and smells like motor oil.	Unknown quantity of oil in this well.
Lewis	This well is sealed at the surface and no longer accessible. Could not verify the presence or absence of oil.	Well could not be evaluated.

^(a) Based on data collected 24 Jan 2012

TABLE 2
 Results of Water Analyses

Analyte	Units	Monitoring Well					Drinking Water Std.
		AA-U	H-U	H-L	I-BG	I-L	
Benzene	mg/L	<0.00100	<0.00100	0.00119	0.00204	<0.00100	0.005
Ethylbenzene	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.7
Naphthalene	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	--
Toluene	mg/L	<0.00200	<0.00200	<0.00200	0.00465	<0.00200	1.0
Xylenes, Total	mg/L	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	10

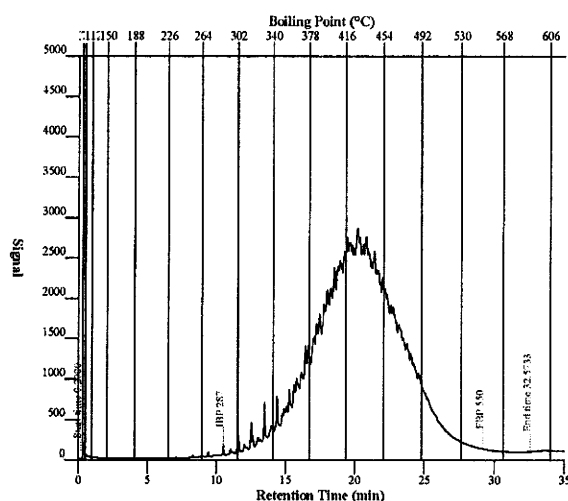
Note: Detected analytes are bolded.

TABLE 3

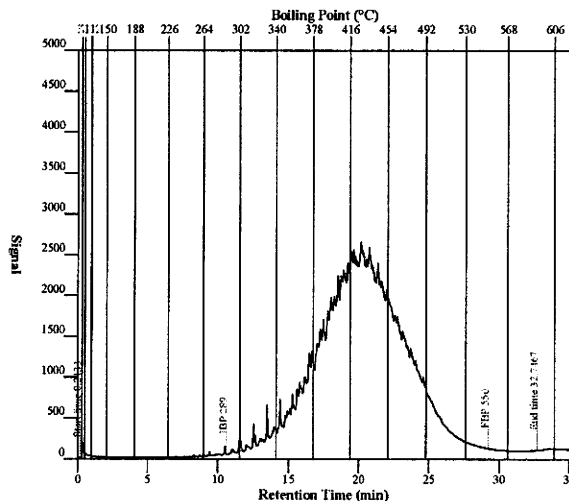
Results of Oil Analyses

Analyte	Units	Monitoring Well			
		AA-M	H-U	H-M	H-L
Kinematic Viscosity @ 40°C	cSt	31.89	0.6718	31.29	0.6666
Kinematic Viscosity @ 100°C	cSt	5.318	--	5.278	--
% Volatilized @ 371°C	Percent	11.0	--	11.0	--

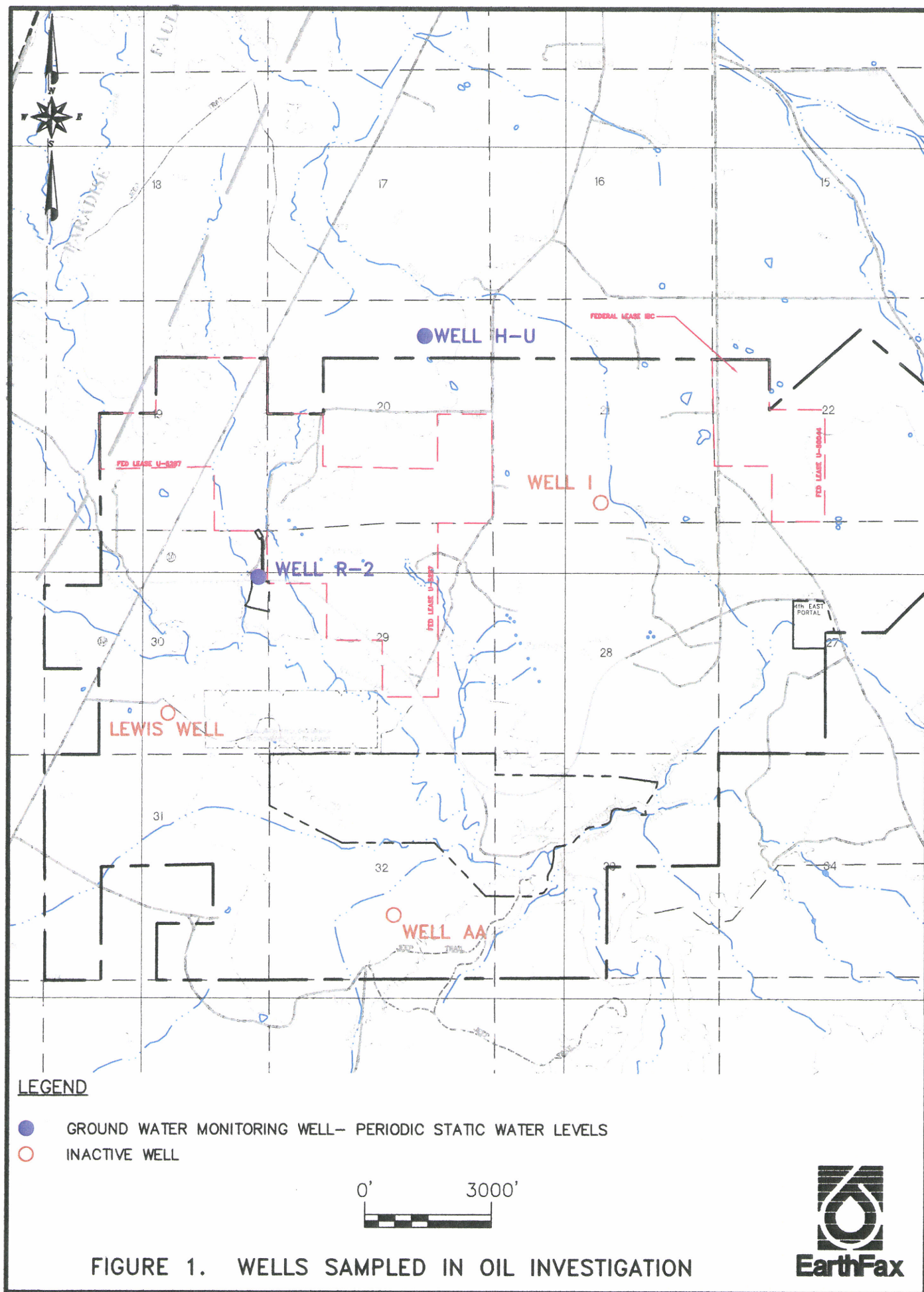
Gas chromatogram of AA-M oil sample:



Gas chromatogram of H-M oil sample:



Conclusion: The kinematic viscosity of the oil is consistent with SAE 20 oil or degraded SAE 30 oil. The gas chromatograms are relatively smooth and consistent between samples, indicating that only one product was introduced into the wells and that this product was the same between wells. The boiling points are consistent with motor oil. It is therefore concluded that the product in the wells is motor oil.



John Gefferth
March 12, 2012

ATTACHMENT A

Historic Water-Level Data

Historic water level measurements in "oily" monitoring wells
Emery Mine, Consolidation Coal Company

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
AA-M	9/28/2011	No Access	Oil in Well	AA-U	9/28/2011	110.5	
AA-M	6/8/2011	No Access	Oil in well	AA-U	6/8/2011	111	
AA-M	3/28/2011	No Access	OIL IN WELL	AA-U	3/28/2011	111	
AA-M	11/24/2010	No Access		AA-U	11/24/2010	111	
AA-M	7/20/2010		0 Oil in well	AA-U	7/20/2010	111	
AA-M	6/22/2010	No Access	Oil in well	AA-U	6/22/2010	111	
AA-M	3/24/2010	No Access	Oil in Well	AA-U	3/25/2010	11	
AA-M	12/29/2009	No Access	No Access	AA-U	12/29/2009	112	
AA-M	12/15/2009	No Access	Oil in well	AA-U	12/15/2009	112	
AA-M	12/12/2008		0 Oil in Well	AA-U	6/3/2009	113	
AA-M	9/22/2008		0 Oil in Well	AA-U	12/12/2008	111	
AA-M	6/24/2008		0 Oil in Well	AA-U	9/22/2008	11	
AA-M	3/26/2008		0 Oil in well	AA-U	6/24/2008	111	
AA-M	12/10/2007		0 Oil in well	AA-U	3/26/2008	110	
AA-M	9/20/2007		0 Oil in well	AA-U	12/10/2007	111	
AA-M	6/13/2007	97		AA-U	9/20/2007	111	
AA-M	3/20/2007		0 OIL IN THE WELL	AA-U	6/13/2007	110.5	
AA-M	11/20/2006		0 Oil in well	AA-U	3/20/2007	110	
AA-M	9/27/2006		0 Oil in well	AA-U	11/20/2006	111	
AA-M	6/29/2006	100	Oil in Well	AA-U	9/27/2006	91	
AA-M	3/6/2006	96.9	Oil in Well.	AA-U	6/29/2006	110.4	
AA-M	11/28/2005	97.1		AA-U	3/6/2006	110.4	
AA-M	7/8/2005	97.3		AA-U	11/28/2005	111	
AA-M	5/23/2005	97.3		AA-U	7/8/2005	108.8	
AA-M	3/31/2005	97.5		AA-U	5/23/2005	110.7	Oil in Well
AA-M	12/27/2004	96.9	Oil in Well	AA-U	3/31/2005	111	
AA-M	9/23/2004	96.75		AA-U	12/27/2004	111	
AA-M	6/23/2004	89.3		AA-U	9/23/2004	111.1	
AA-M	3/30/2004	89.6		AA-U	6/23/2004	112.1	
AA-M	12/19/2003	86		AA-U	3/30/2004	112.1	
AA-M	9/18/2003	84.75		AA-U	12/19/2003	112	
AA-M	6/25/2003	89.5		AA-U	9/18/2003	111.7	
AA-M	3/26/2003	89.5		AA-U	6/25/2003	118	
AA-M	12/21/2002	91.58		AA-U	3/26/2003	111.67	
AA-M	9/28/2002	91		AA-U	12/21/2002	113.92	
AA-M	6/24/2002	90.3		AA-U	9/28/2002	112.33	
AA-M	3/27/2002	91.2		AA-U	6/24/2002	111.8	
AA-M	12/17/2001	No Access		AA-U	3/27/2002	114.9	
AA-M	9/12/2001	90		AA-U	12/17/2001	No Access	
AA-M	6/13/2001	87.8		AA-U	9/12/2001	111.8	
AA-M	3/23/2001	86.2		AA-U	6/13/2001	111.2	
AA-M	3/15/1999	88.5		AA-U	3/23/2001	110.7	
AA-M	12/7/1998	88.8		AA-U	3/15/1999	112.2	
AA-M	9/16/1998	88.5		AA-U	12/7/1998	112.5	
AA-M	6/26/1998	87.800003		AA-U	9/16/1998	112.6	
AA-M	3/24/1998	88.5		AA-U	6/26/1998	112.5	
AA-M	12/18/1997	92.7		AA-U	3/24/1998	113	
AA-M	9/29/1997	89.800003		AA-U	12/18/1997	112.8	
AA-M	6/20/1997	90.2231		AA-U	9/29/1997	111.8	
AA-M	3/21/1997	90.715226		AA-U	6/20/1997	112.20473	
AA-M	12/5/1996	90.2		AA-U	3/21/1997	111.54856	
AA-M	9/9/1996	89.9		AA-U	12/5/1996	110.8	
AA-M	6/4/1996	88.9		AA-U	9/9/1996	111.5	
AA-M	12/5/1995	90.5		AA-U	6/4/1996	113.9	
AA-M	9/5/1995	92.7		AA-U	12/5/1995	113	
AA-M	6/7/1995	92.5		AA-U	9/5/1995	112.8	
AA-M	3/3/1995	92.8		AA-U	6/7/1995	112.7	
AA-M	12/1/1994	91.3		AA-U	3/3/1995	112.6	
AA-M	9/9/1994	92.2		AA-U	12/1/1994	112.3	
AA-M	6/7/1994	90.3		AA-U	9/9/1994	112.8	
AA-M	3/9/1994	91.1		AA-U	6/7/1994	112.4	
AA-M	12/7/1993	87.2		AA-U	3/9/1994	113	
AA-M	9/8/1993	90		AA-U	12/7/1993	113.1	
AA-M	6/2/1993	87.6		AA-U	9/8/1993	113	
AA-M	3/22/1993	85.3		AA-U	6/2/1993	112.5	
AA-M	3/13/1992	89		AA-U	3/22/1993	112.6	
AA-M	6/22/1981	-120.4		AA-U	3/13/1992	111.2	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
AA-M	5/11/1981	-21.54		AA-U	7/23/1981	38.04	
AA-M	4/11/1981	-23.15		AA-U	6/22/1981	-22.91	
AA-M	3/16/1981	-22.92		AA-U	5/11/1981	-123.27	
AA-M	2/9/1981	-21.77		AA-U	4/11/1981	-127.19	
AA-M	1/8/1981	-21.07		AA-U	3/16/1981	-135.73	
AA-M	12/9/1980	-21.77		AA-U	2/9/1981	-136.39	
AA-M	11/7/1980	-21.3		AA-U	1/8/1981	-136.63	
AA-M	10/13/1980	-21.77		AA-U	12/9/1980	-135.01	
AA-M	9/17/1980	-22.69		AA-U	11/7/1980	-136.39	
AA-M	8/11/1980	-21.69		AA-U	10/13/1980	-136.86	
AA-M	7/16/1980	-18.22		AA-U	9/16/1980	-136.96	
AA-M	6/11/1980	-18.22		AA-U	8/12/1980	-137.71	
AA-M	5/21/1980	-25.15		AA-U	7/16/1980	-141.17	
AA-M	4/19/1980	-25.15		AA-U	6/11/1980	-141.17	
AA-M	3/17/1980	-22.84		AA-U	5/21/1980	-141.17	
AA-M	11/16/1979	-2.23		AA-U	4/19/1980	-118.1	
				AA-U	3/17/1980	-118.1	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
H-L	9/27/2011	No Access	Oil in Well	H-M	9/27/2011	No Access	Oil in Well
H-L	6/21/2011	No Access	Oil in well	H-M	6/21/2011	No Access	Oil in well
H-L	3/29/2011	No Access	OIL IN WELL	H-M	3/29/2011	No Access	OIL IN WELL
H-L	11/24/2010	No Access		H-M	11/24/2010	No Access	
H-L	7/20/2010	No Access	oil in well	H-M	7/20/2010	No Access	oil in well
H-L	6/22/2010	No Access	Oil in well	H-M	6/22/2010	No Access	Oil in well
H-L	3/24/2010	No Access	Oil in well	H-M	3/24/2010	No Access	Oil in well
H-L	12/29/2009	No Access	Oil in well	H-M	12/29/2009	No Access	Oil in well
H-L	12/14/2009	No Access	Oil in well	H-M	12/14/2009	No Access	Oil in well
H-L	12/12/2008	0	Oil in Well	H-M	6/3/2009	No Access	Oil in well
H-L	9/20/2008	0	Oil in Well	H-M	12/12/2008	0	Oil in Well
H-L	6/24/2008	0	Oil in well	H-M	9/20/2008	0	Oil in Well
H-L	3/28/2008	0	Oil in well	H-M	6/24/2008	0	Oil in well
H-L	12/11/2007	0	Oil in well	H-M	3/28/2008	0	Oil in well
H-L	9/20/2007	51		H-M	12/11/2007	0	Oil in well
H-L	6/14/2007	0		H-M	9/20/2007	0	Oil in well
H-L	3/20/2007	0		H-M	6/14/2007	0	
H-L	11/27/2006	0		H-M	3/20/2007	0	OIL IN THE WELL
H-L	9/27/2006	0	Oil in well	H-M	11/27/2006	0	Oil in well
H-L	6/29/2006	81	Oil in Well	H-M	9/27/2006	0	Oil in well
H-L	3/9/2006	80.2	Oil in Well.	H-M	6/29/2006	321	
H-L	11/22/2005	80.8	Oil in well	H-M	3/9/2006	300	Oil in Well.
H-L	7/11/2005	80.5	Oil in Well	H-M	11/22/2005	0	Oil in well could not get a reading
H-L	5/23/2005	Dry Wells	Oil in Well	H-M	7/11/2005	0	Oil in Well will not read depth
H-L	3/25/2005	Dry Wells	Oil in Well	H-M	5/23/2005	Dry Wells	Oil in Well
H-L	12/28/2004	Dry Wells	Oil in well depth unknown	H-M	3/25/2005	Dry Wells	Oil in Well
H-L	9/25/2004	0		H-M	12/28/2004	Dry Wells	Oil in well depth unknown
H-L	6/18/2004	80.3		H-M	9/25/2004	0	
H-L	3/30/2004	84.3		H-M	6/18/2004	416	
H-L	12/19/2003	19.7		H-M	3/30/2004	414.8	
H-L	9/17/2003	0	Too Oily Probe Wont Read	H-M	12/19/2003	415	
H-L	5/28/2003	89		H-M	9/17/2003	414	Oily
H-L	3/14/2003	79.17		H-M	5/28/2003	409	
H-L	12/21/2002	84.33		H-M	3/14/2003	417	
H-L	9/23/2002	83.75		H-M	12/21/2002	414.83	
H-L	6/27/2002	83.9		H-M	9/23/2002	412.2	
H-L	3/21/2002	82		H-M	6/27/2002	412.3	
H-L	12/12/2001	84.3		H-M	3/21/2002	409.9	
H-L	9/12/2001	84.2		H-M	12/12/2001	415.1	
H-L	6/13/2001	83.8		H-M	9/12/2001	414.8	
H-L	3/22/2001	80.8		H-M	6/13/2001	412.7	
H-L	3/15/1999	82.8		H-M	3/22/2001	404	
H-L	12/10/1998	84		H-M	3/15/1999	413.2	
H-L	9/16/1998	83.4		H-M	12/10/1998	416.5	
H-L	6/26/1998	83.9		H-M	9/16/1998	417	
H-L	3/31/1998	82.9		H-M	6/26/1998	413.5	
H-L	12/16/1997	83.5		H-M	3/31/1998	413.7	
H-L	9/29/1997	84.200003		H-M	12/16/1997	414.2	
H-L	6/20/1997	84.317588		H-M	9/29/1997	409.90001	
H-L	3/6/1997	83.595803		H-M	6/20/1997	410.105	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
H-L	12/27/1996	83.7		H-M	3/6/1997	409.90815	
H-L	9/9/1996	83.4		H-M	12/27/1996	410.4	
H-L	6/10/1996	83.1		H-M	9/9/1996	408.5	
H-L	12/6/1995	84.7		H-M	6/10/1996	412.8	
H-L	9/11/1995	91		H-M	12/6/1995	414.9	
H-L	6/7/1995	81		H-M	9/11/1995	415.2	
H-L	3/2/1995	80.8		H-M	6/7/1995	411.2	
H-L	12/1/1994	81.8		H-M	3/2/1995	406	
H-L	9/9/1994	80.3		H-M	12/1/1994	406.2	
H-L	6/8/1994	81.2		H-M	9/9/1994	405.2	
H-L	3/8/1994	80		H-M	6/8/1994	410.6	
H-L	12/8/1993	77.5		H-M	3/8/1994	405.1	
H-L	9/10/1993	78.5		H-M	12/8/1993	402.1	
H-L	6/2/1993	75.8		H-M	9/10/1993	405.3	
H-L	3/4/1993	75.1		H-M	6/2/1993	399.2	
H-L	3/13/1992	71.5		H-M	3/4/1993	400	
H-L	1/14/1985	19.6		H-M	3/13/1992	392.8	
H-L	6/22/1981	-21.91		H-M	1/14/1985	59.9	
H-L	5/11/1981	-22.14		H-M	6/22/1981	-21.24	
H-L	4/11/1981	-21.91		H-M	5/11/1981	-23.55	
H-L	3/16/1981	-23.87		H-M	4/11/1981	-25.86	
H-L	2/9/1981	-38.26		H-M	3/16/1981	-22.39	
H-L	1/9/1981	-23.27		H-M	2/9/1981	-22.39	
H-L	12/10/1980	-17.5		H-M	1/9/1981	-23.31	
H-L	11/8/1980	-22.11		H-M	12/10/1980	-23.31	
H-L	10/13/1980	-15.42		H-M	11/8/1980	-24.24	
H-L	9/17/1980	-10.27		H-M	10/13/1980	-22.85	
H-L	8/11/1980	-11.43		H-M	9/17/1980	-19.18	
H-L	7/15/1980	-16.04		H-M	8/11/1980	-20.63	
H-L	6/10/1980	-16.04		H-M	7/15/1980	-20.63	
H-L	5/21/1980	-16.04		H-M	6/10/1980	-25.25	
H-L	4/18/1980	-16.04		H-M	5/21/1980	-25.25	
H-L	3/14/1980	-16.04		H-M	4/18/1980	-25.25	
H-L	11/15/1979	-13		H-M	3/14/1980	-25.25	
H-L	10/24/1979	-13.5		H-M	11/15/1979	-25	
				H-M	10/24/1979	-60	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
H-U	9/27/2011	90.5		I-B	9/27/2011	No Access	Oil in Well
H-U	6/21/2011	90.8		I-B	6/8/2011	No Access	Oil in well
H-U	3/29/2011	88		I-B	3/29/2011	No Access	OIL IN WELL
H-U	11/24/2010	85		I-B	10/15/2010	No Access	
H-U	7/21/2010	80		I-B	7/20/2010	No Access	oil in well
H-U	6/23/2010	80		I-B	6/22/2010	No Access	Oil in well
H-U	3/25/2010	80		I-B	3/24/2010	No Access	Oil in well
H-U	12/29/2009	70		I-B	12/29/2009	No Access	Oil in well
H-U	12/14/2009	69		I-B	12/14/2009	No Access	Oil in well
H-U	6/3/2009	69		I-B	6/3/2009	No Access	Oil in well
H-U	12/12/2008	65		I-B	12/12/2008	0	Oil in Well
H-U	9/20/2008	54		I-B	9/20/2008	0	Oil in Well
H-U	6/24/2008	60	hit oil	I-B	6/24/2008	0	Oil in well
H-U	3/28/2008	56		I-B	3/28/2008	0	Oil in well
H-U	12/10/2007	53		I-B	12/10/2007	No Access	Oil in well
H-U	9/20/2007	51		I-B	9/20/2007	0	Oil in well
H-U	6/14/2007	47		I-B	6/14/2007	0	
H-U	3/20/2007	43.5		I-B	3/20/2007	0	OIL IN WELL
H-U	11/27/2006	39		I-B	11/27/2006	0	Oil in well couldn't sample
H-U	9/27/2006	38.5		I-B	9/27/2006	0	Oil in well
H-U	6/29/2006	36		I-B	6/29/2006	68.8	Oil in well
H-U	3/9/2006	34.8		I-B	3/9/2006	70	
H-U	11/22/2005	32.4		I-B	11/17/2005	69.9	
H-U	7/11/2005	32.5		I-B	7/20/2005	69.3	
H-U	5/23/2005	59.7		I-B	5/23/2005	Dry Wells	Probe stops at 66 feet
H-U	3/25/2005	41.4		I-B	3/25/2005	Dry Wells	Probe Stops at 66'
H-U	12/28/2004	53.5		I-B	12/28/2004	Dry Wells	Broken pump down
H-U	9/25/2004	61.75		I-B	9/25/2004	66	no water to sample
H-U	6/18/2004	60.6		I-B	6/18/2004	66	probe catches at 66 feet
H-U	3/30/2004	59.5		I-B	3/18/2004	67	
H-U	12/19/2003	62.5		I-B	12/19/2003	66	probe stops at this depth

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
H-U	9/17/2003	61	Oily	I-B	9/17/2003	66	Probe stops at 66'
H-U	5/28/2003	56.6		I-B	5/28/2003	No Access	Probe stops a 66'
H-U	3/14/2003	58.25		I-B	3/14/2003	66	Probe stops
H-U	12/21/2002	59.08		I-B	12/21/2002	65.5	Probes Stops
H-U	9/23/2002	57.7		I-B	9/23/2002	66	
H-U	6/27/2002	57.7		I-B	6/27/2002	66	probe stops
H-U	3/21/2002	57.3		I-B	3/21/2002	66	probe stops
H-U	12/12/2001	58.2		I-B	12/12/2001	66	probe sticks at this depth
H-U	9/12/2001	57.8		I-B	9/12/2001	66	
H-U	6/13/2001	57.1		I-B	6/13/2001	66	probe sticks - can't get in any farther
H-U	3/22/2001	56.3		I-B	3/22/2001	66	
H-U	3/15/1999	57.4		I-B	3/17/1999	66	
H-U	12/10/1998	57.5		I-B	12/10/1998	66	
H-U	9/16/1998	57.6		I-B	9/8/1998	68	
H-U	6/26/1998	57.8		I-B	6/26/1998	68	
H-U	3/31/1998	57.2		I-B	3/31/1998	68	
H-U	12/16/1997	58.6		I-B	12/12/1997	65.2	
H-U	9/29/1997	56.800002		I-B	9/29/1997	64.900002	
H-U	6/20/1997	56.758532		I-B	6/20/1997	65.288716	
H-U	3/6/1997	57.906826		I-B	3/6/1997	64.99344	
H-U	12/27/1996	57.5		I-B	12/27/1996	63.5	
H-U	9/9/1996	57.5		I-B	9/9/1996	64.4	
H-U	6/10/1996	57.8		I-B	6/10/1996	61.4	
H-U	12/6/1995	57.9		I-B	12/6/1995	62.7	
H-U	9/11/1995	56.2		I-B	9/11/1995	62.5	
H-U	6/7/1995	57.1		I-B	6/7/1995	62	
H-U	3/2/1995	56.1		I-B	3/2/1995	61.4	
H-U	12/1/1994	57.3		I-B	12/1/1994	60.3	
H-U	9/8/1994	57.7		I-B	9/8/1994	60.2	
H-U	6/8/1994	57.7		I-B	6/7/1994	53.8	
H-U	3/8/1994	57.2		I-B	3/8/1994	56.2	
H-U	12/8/1993	56.2		I-B	12/8/1993	56.4	
H-U	9/10/1993	57		I-B	9/9/1993	57	
H-U	6/2/1993	57.2		I-B	6/2/1993	56	
H-U	3/4/1993	56		I-B	3/3/1993	55	
H-U	3/13/1992	57		I-B	3/13/1992	48.4	
H-U	1/14/1985	57.9		I-B	6/22/1981	10.46	
H-U	6/22/1981	53.53		I-B	5/11/1981	10.25	
H-U	5/11/1981	52.65		I-B	4/11/1981	10.02	
H-U	4/11/1981	52.1		I-B	3/16/1981	9.93	
H-U	3/16/1981	55.8		I-B	2/9/1981	9.31	
H-U	2/9/1981	56.67		I-B	1/9/1981	9.75	
H-U	1/9/1981	56.96		I-B	11/8/1980	9.51	
H-U	11/8/1980	60.99		I-B	10/13/1980	9.78	
H-U	10/13/1980	60.75		I-B	9/17/1980	10.14	
H-U	9/16/1980	59.74		I-B	8/11/1980	10.58	
H-U	8/11/1980	60.45		I-B	7/15/1980	11.01	
H-U	7/15/1980	60.2		I-B	6/10/1980	10.9	
H-U	6/10/1980	57.63		I-B	5/21/1980	11.04	
H-U	5/21/1980	56.82		I-B	4/18/1980	11.05	
H-U	4/18/1980	53.68		I-B	3/14/1980	10.47	
H-U	3/14/1980	51.59		I-B	11/15/1979	11.69	
H-U	11/15/1979	64.18		I-B	10/25/1979	9.56	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
I-L	9/27/2011	18.5		I-M	9/27/2011	No Access	Oil in Well
I-L	6/8/2011	18		I-M	6/8/2011	No Access	Oil in well
I-L	3/29/2011	18		I-M	3/29/2011	No Access	OIL IN WELL
I-L	10/15/2010	18		I-M	10/5/2010	No Access	
I-L	7/20/2010	18		I-M	7/20/2010	No Access	oil in well
I-L	6/23/2010	18		I-M	6/22/2010	No Access	Oil in well
I-L	3/25/2010	18		I-M	3/24/2010	No Access	Oil in Well
I-L	12/29/2009	18		I-M	12/29/2009	No Access	Oil in well
I-L	12/14/2009	18		I-M	12/14/2009	No Access	Oil in well
I-L	6/3/2009	18		I-M	12/12/2008	0	Oil in Well
I-L	12/12/2008	18		I-M	9/20/2008	0	Oil in Well
I-L	9/22/2008	17		I-M	6/24/2008	395	
I-L	6/24/2008	17	Hit oil	I-M	3/28/2008	394	
I-L	3/28/2008	17	Hit oil	I-M	12/10/2007	394	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
I-L	12/10/2007	18		I-M	9/20/2007	13	
I-L	9/20/2007	395		I-M	6/14/2007	396	
I-L	6/14/2007	13		I-M	3/20/2007	396	
I-L	3/20/2007	17		I-M	11/27/2006	395	
I-L	11/27/2006	17		I-M	9/27/2006	395	
I-L	9/27/2006	17.5		I-M	6/29/2006	393.6	
I-L	6/29/2006	18.3		I-M	3/9/2006	390.9	
I-L	3/9/2006	17.6		I-M	11/22/2005	389	
I-L	11/17/2005	18		I-M	7/20/2005	237.8	
I-L	7/20/2005	18.8		I-M	5/23/2005	233.8	
I-L	5/23/2005	18.3		I-M	3/25/2005	234.6	
I-L	3/25/2005	19.1		I-M	12/28/2004	262	
I-L	12/28/2004	18.6		I-M	9/25/2004	262.9	
I-L	9/26/2004	19		I-M	6/18/2004	240.2	
I-L	6/18/2004	18.5		I-M	3/30/2004	249.3	
I-L	3/18/2004	21		I-M	12/19/2003	262	
I-L	12/19/2003	21.2		I-M	9/17/2003	263	
I-L	9/17/2003	19.7		I-M	5/28/2003	242.4	
I-L	5/28/2003	20		I-M	3/14/2003	240.5	
I-L	3/14/2003	16		I-M	12/21/2002	239.33	
I-L	12/21/2002	16		I-M	9/23/2002	238.8	
I-L	9/23/2002	16.75		I-M	6/27/2002	238	
I-L	6/27/2002	17.8		I-M	3/21/2002	238.1	
I-L	3/21/2002	18		I-M	12/12/2001	238.8	
I-L	12/12/2001	15.8		I-M	9/12/2001	238.9	
I-L	9/12/2001	15.5		I-M	6/13/2001	237.6	
I-L	6/13/2001	15.2		I-M	3/22/2001	237.3	
I-L	3/22/2001	17.9		I-M	3/17/1999	238.2	
I-L	3/17/1999	15.1		I-M	12/10/1998	237.7	
I-L	12/10/1998	15		I-M	9/8/1998	238.2	
I-L	9/8/1998	14		I-M	6/26/1998	239.5	
I-L	6/26/1998	15.1		I-M	3/31/1998	237.8	
I-L	3/31/1998	14		I-M	12/12/1997	239.2	
I-L	12/12/1997	14.2		I-M	9/29/1997	240.00001	
I-L	9/29/1997	15.4		I-M	6/20/1997	239.50132	
I-L	6/20/1997	15.419948		I-M	3/6/1997	240.48557	
I-L	3/6/1997	15.485565		I-M	12/27/1996	241.2	
I-L	12/27/1996	15.8		I-M	9/9/1996	240.7	
I-L	9/9/1996	15		I-M	6/10/1996	241.3	
I-L	6/10/1996	15.5		I-M	12/6/1995	242.2	
I-L	12/6/1995	15.8		I-M	9/11/1995	242.2	
I-L	9/11/1995	17.1		I-M	6/7/1995	242.3	
I-L	6/7/1995	17.1		I-M	3/2/1995	242.8	
I-L	3/2/1995	17		I-M	12/1/1994	243.8	
I-L	12/1/1994	17.3		I-M	9/8/1994	244.1	
I-L	9/8/1994	16.2		I-M	6/7/1994	243.4	
I-L	6/7/1994	16.8		I-M	3/8/1994	242.7	
I-L	3/8/1994	16.7		I-M	12/8/1993	236.8	
I-L	12/8/1993	16.1		I-M	9/9/1993	237.5	
I-L	9/9/1993	16.5		I-M	6/2/1993	238.4	
I-L	6/2/1993	16.9		I-M	3/3/1993	237.2	
I-L	3/3/1993	16.8		I-M	3/13/1992	233.1	
I-L	3/13/1992	13.4		I-M	6/22/1981	105.9	
I-L	6/22/1981	0.37		I-M	5/11/1981	109.56	
I-L	5/11/1981	-0.11		I-M	4/11/1981	111.78	
I-L	4/11/1981	-0.3		I-M	3/16/1981	112.43	
I-L	3/16/1981	-0.47		I-M	2/9/1981	113.7	
I-L	11/18/1980	-1.35		I-M	1/9/1981	115.36	
I-L	10/13/1980	-1.4		I-M	11/8/1980	80.98	
I-L	8/11/1980	-1.07		I-M	10/13/1980	80.08	
I-L	7/17/1980	-1.4		I-M	9/17/1980	79.57	
I-L	7/16/1980	-1.4		I-M	8/11/1980	77.9	
I-L	6/10/1980	-1.4		I-M	7/15/1980	75.62	
I-L	5/21/1980	-1.4		I-M	6/10/1980	74.06	
I-L	4/18/1980	-1.4		I-M	5/21/1980	72.93	
I-L	3/14/1980	-1.4		I-M	4/18/1980	70.94	
I-L	11/15/1979	-1.33		I-M	3/14/1980	68.18	
I-L	10/30/1979	11.33		I-M	11/15/1979	51.14	
				I-M	10/25/1979	62.25	

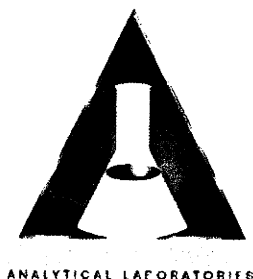
SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
LEWIS-U	9/22/2011	No Access		R2-U	9/27/2011	497	
LEWIS-U	6/8/2011	No Access		R2-U	6/21/2011	510.11	
LEWIS-U	3/28/2011	No Access		R2-U	3/25/2011	506.8	
LEWIS-U	11/24/2010	No Access		R2-U	10/15/2010	510	
LEWIS-U	7/20/2010	No Access		R2-U	7/19/2010	503	
LEWIS-U	6/22/2010	No Access	Oil in well	R2-U	6/23/2010	500	
LEWIS-U	3/25/2010	No Access	No Access	R2-U	3/25/2010	505	
LEWIS-U	12/14/2009	No Access	No Access	R2-U	12/29/2009	535	
LEWIS-U	6/3/2009	No Access	No Access	R2-U	12/14/2009	532	
LEWIS-U	2/25/2009	No Access	No Access	R2-U	6/3/2009	532	
LEWIS-U	12/12/2008	No Access	No Access	R2-U	12/12/2008	550	
LEWIS-U	9/22/2008	No Access	No Access	R2-U	9/20/2008	562	
LEWIS-U	6/24/2008	No Access		R2-U	6/24/2008	570	
LEWIS-U	3/26/2008	No Access		R2-U	3/26/2008	567	
LEWIS-U	12/10/2007	No Access		R2-U	12/10/2007	575	Dry
LEWIS-U	9/20/2007	0	No access	R2-U	9/18/2007	537	
LEWIS-U	6/13/2007	No Access		R2-U	6/14/2007	563	
LEWIS-U	3/22/2007	No Access		R2-U	3/20/2007	488	
LEWIS-U	11/20/2006	0	No Access to the hole	R2-U	11/20/2006	488	
LEWIS-U	9/27/2006	0	No access to sample	R2-U	9/28/2006	488	
LEWIS-U	6/29/2006	No Access	No Access to sample	R2-U	6/29/2006	Dry Wells	491.0' deep and dry
LEWIS-U	3/6/2006	No Access	No access to sample.	R2-U	3/7/2006	531	Oil in Well.
LEWIS-U	11/28/2005	No Access	No access to the well	R2-U	11/28/2005	550.7	
LEWIS-U	7/22/2005	Dry Wells	Well is 276 ft. deep and Dry	R2-U	7/11/2005	602.6	Oil in Well
LEWIS-U	5/23/2005	Dry Wells		R2-U	5/23/2005	Dry Wells	438 Feet and dry
LEWIS-U	3/31/2005	Dry Wells		R2-U	3/24/2005	Dry Wells	
LEWIS-U	12/27/2004	Dry Wells	Site was dry	R2-U	12/28/2004	Dry Wells	Site was dry at 488'
LEWIS-U	9/25/2004	215	Not enough water to sample	R2-U	9/20/2004	0	Site was dry
LEWIS-U	6/18/2004	215	probe hangs up	R2-U	6/23/2004	488	
LEWIS-U	3/29/2004	215	probe stops at 215 feet	R2-U	3/18/2004	0	dry
LEWIS-U	12/19/2003	275		R2-U	12/19/2003	488	
LEWIS-U	9/17/2003	275	Dry	R2-U	9/17/2003	488	Dry
LEWIS-U	6/12/2003	Dry Wells	Plugged @ 216'	R2-U	5/28/2003	Dry Wells	Well dry at 488'
LEWIS-U	3/13/2003	216	Probe Stops	R2-U	3/14/2003	487	
LEWIS-U	12/21/2002	Dry Wells	probe pipe plugged at 215 feet	R2-U	12/21/2002	488	
LEWIS-U	9/24/2002	215		R2-U	9/28/2002	0	
LEWIS-U	6/24/2002			R2-U	6/27/2002	487	
LEWIS-U	3/27/2002	215	probe stops	R2-U	3/1/2002	487	
LEWIS-U	12/17/2001		probe sticks at this point	R2-U	12/17/2001	487	
LEWIS-U	9/5/2001		DIS.METALS FILTERED @ LAB	R2-U	9/12/2001	487	
LEWIS-U	6/5/2001		DIS.METALS FILTERED @ LAB	R2-U	6/13/2001	487	
LEWIS-U	3/23/2001	215		R2-U	3/22/2001	487	
LEWIS-U	6/13/2000			R2-U	3/15/1999		
LEWIS-U	3/15/1999			R2-U	12/10/1998		
LEWIS-U	12/10/1998			R2-U	9/15/1998		
LEWIS-U	9/8/1998	281.2		R2-U	6/26/1998		
LEWIS-U	6/2/1998	281.2		R2-U	3/31/1998		
LEWIS-U	3/24/1998			R2-U	12/5/1997		
LEWIS-U	12/18/1997			R2-U	9/30/1997		
LEWIS-U	9/8/1997	280.900009		R2-U	6/20/1997		
LEWIS-U	6/3/1997	279.855652		R2-U	3/3/1997		
LEWIS-U	3/5/1997	278.805783		R2-U	12/5/1996	Dry Wells	
LEWIS-U	12/5/1996	278.3		R2-U	9/9/1996		
LEWIS-U	9/4/1996	270		R2-U	6/10/1996		
LEWIS-U	6/4/1996	275		R2-U	12/5/1995		
LEWIS-U	12/5/1995			R2-U	9/7/1995		
LEWIS-U	9/5/1995			R2-U	6/1/1995		
LEWIS-U	9/5/1995	271		R2-U	3/2/1995		
LEWIS-U	6/6/1995			R2-U	12/1/1994		
LEWIS-U	6/6/1995	270.8		R2-U	9/8/1994		
LEWIS-U	3/2/1995	271.1		R2-U	6/7/1994		
LEWIS-U	12/1/1994	271.1		R2-U	3/8/1994		
LEWIS-U	9/7/1994			R2-U	12/7/1993		
LEWIS-U	9/7/1994	270.3		R2-U	9/9/1993		dry to 487 feet
LEWIS-U	6/6/1994			R2-U	6/4/1993		dry to 487 feet
LEWIS-U	6/6/1994	268.8		R2-U	3/3/1993		dry to 487 feet
LEWIS-U	3/8/1994	268.5		R2-U	3/13/1992		
LEWIS-U	12/7/1993	267		R2-U	1/14/1985		
LEWIS-U	9/7/1993			R2-U	6/22/1981	-36.17	

SITE NAME	DATE	Depth feet	COMMENTS	SITE NAME	DATE	Depth feet	COMMENTS
LEWIS-U	9/7/1993	264		R2-U	5/11/1981	-43.33	
LEWIS-U	6/7/1993			R2-U	4/11/1981	-53.03	
LEWIS-U	6/2/1993	263.8		R2-U	3/16/1981	-47.49	
LEWIS-U	3/3/1993	264.1		R2-U	2/9/1981	-29.43	
LEWIS-U	9/2/1992	266		R2-U	1/8/1981	-25.08	
LEWIS-U	5/26/1992			R2-U	12/9/1980	-26.2	
LEWIS-U	3/13/1992	263.4		R2-U	11/7/1980	-26.43	
LEWIS-U	9/23/1991			R2-U	10/13/1980	-28.05	
LEWIS-U	6/5/1991			R2-U	9/17/1980	-21.39	
LEWIS-U	9/17/1990	-17		R2-U	8/10/1980	36.93	
LEWIS-U	6/8/1990	261		R2-U	7/15/1980	-11.14	
LEWIS-U	9/11/1989	257.7		R2-U	6/11/1980	-11.14	
LEWIS-U	6/30/1989	261		R2-U	5/2/1980	-15.76	
LEWIS-U	6/24/1986			R2-U	4/18/1980	-15.76	
LEWIS-U	9/19/1985			R2-U	3/14/1980	-15.76	
LEWIS-U	6/20/1985			R2-U	12/7/1979	-175.33	

John Gefferth
March 12, 2012

ATTACHMENT B

Laboratory Analytical Reports



Rich White
EarthFax Engineering
7324 So. Union Park Ave., # 100
Midvale, UT 84047
TEL: (801) 561-1555

RE: Emery / Consol

Dear Rich White:

Lab Set ID: 1201352

463 West 3600 South
Salt Lake City, UT 84115

American West Analytical Laboratories received 5 sample(s) on 1/25/2012 for the analyses presented in the following report.

Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com

All analyses were performed in accordance to The NELAC Institute protocols unless noted otherwise. American West Analytical Laboratories is accredited by The NELAC Institute in Utah and Texas; and is state accredited in Colorado, Idaho, and Missouri. Accreditation documents are available upon request. If you have any questions or concerns regarding this report please feel free to call.

web: www.awal-labs.com

The abbreviation "Surr" found in organic reports indicates a surrogate compound that is intentionally added by the laboratory to determine sample injection, extraction, and/or purging efficiency. The "Reporting Limit" found on the report is equivalent to the practical quantitation limit (PQL). This is the minimum concentration that can be reported by the method referenced and the sample matrix. The reporting limit must not be confused with any regulatory limit. Analytical results are reported to three significant figures for quality control and calculation purposes.

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Thank You,

Approved by:

Kyle F. Gross
Digitally signed by Kyle F. Gross
DN: cn=Kyle F. Gross, o=AWAL,
ou=AWAL, email=kyle@awal-
labs.com, c=US
Date: 2012.01.27 10:19:17 -07'00'

Laboratory Director or designee



ORGANIC ANALYTICAL REPORT

Client: EarthFax Engineering

Contact: Rich White

Project: Emery / Consol

Lab Sample ID: 1201352-001A

Client Sample ID: H-V

Collection Date: 1/24/2012 1130h

Received Date: 1/25/2012 933h

Method: SW8260C

Analytical Results

VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 1/26/2012 051h

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT 84115

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web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	0.0504	0.05000	101	77-129	
Surr: Dibromofluoromethane	1868-53-7	0.0505	0.05000	101	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	0.0503	0.05000	101	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0574	0.05000	115	74-151	



ORGANIC ANALYTICAL REPORT

Client: EarthFax Engineering

Contact: Rich White

Project: Emery / Consol

Lab Sample ID: 1201352-002A

Client Sample ID: H-L

Collection Date: 1/24/2012 1145h

Received Date: 1/25/2012 933h

Method: SW8260C

Analytical Results

VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 1/26/2012 114h

Units: mg/L

Dilution Factor: 1

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Salt Lake City, UT 84115

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e-mail: awal@awal-labs.com

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	0.00119	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	0.0510	0.05000	102	77-129	
Surr: Dibromofluoromethane	1868-53-7	0.0521	0.05000	104	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	0.0520	0.05000	104	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0609	0.05000	122	74-151	



ANALYTICAL LABORATORIES

ORGANIC ANALYTICAL REPORT

Client: EarthFax Engineering

Contact: Rich White

Project: Emery / Consol

Lab Sample ID: 1201352-003A

Client Sample ID: I-L

Collection Date: 1/24/2012 1210h

Received Date: 1/25/2012 933h

Method: SW8260C

Analytical Results

VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 1/26/2012 136h

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

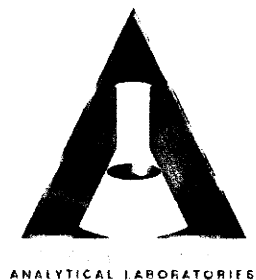
Phone: (801) 263-8686
Toll Free: (888) 263-8686
Fax: (801) 263-8687
e-mail: awal@awal-labs.com

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	0.0492	0.05000	98.4	77-129	
Surr: Dibromofluoromethane	1868-53-7	0.0499	0.05000	99.8	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	0.0492	0.05000	98.5	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0575	0.05000	115	74-151	

web: www.awal-labs.com

Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: EarthFax Engineering

Contact: Rich White

Project: Emery / Consol

Lab Sample ID: 1201352-004A

Client Sample ID: I-BG

Collection Date: 1/24/2012 1215h

Received Date: 1/25/2012 933h

Method: SW8260C

Analytical Results

VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 1/26/2012 159h

Units: mg/L

Dilution Factor: 1

463 West 3600 South
Salt Lake City, UT 84115

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	0.00204	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	0.00465	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

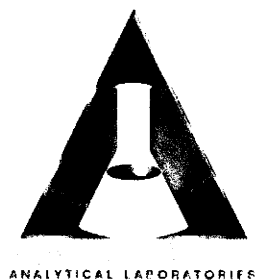
Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	0.0501	0.05000	100	77-129	
Surr: Dibromofluoromethane	1868-53-7	0.0503	0.05000	101	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	0.0521	0.05000	104	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0581	0.05000	116	74-151	

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer



ORGANIC ANALYTICAL REPORT

Client: EarthFax Engineering

Contact: Rich White

Project: Emery / Consol

Lab Sample ID: 1201352-005A

Client Sample ID: AA-V

Collection Date: 1/24/2012 1400h

Received Date: 1/25/2012 933h

Method: SW8260C

Analytical Results

VOAs MBTEXN List by GC/MS Method 8260C/5030C

Analyzed: 1/26/2012 221h

Units: mg/L

Dilution Factor: 1

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Salt Lake City, UT 84115

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Kyle F. Gross
Laboratory Director

Jose Rocha
QA Officer

Compound	CAS Number	Reporting Limit	Analytical Result	Qual
Benzene	71-43-2	0.00100	< 0.00100	
Ethylbenzene	100-41-4	0.00200	< 0.00200	
Naphthalene	91-20-3	0.00200	< 0.00200	
Toluene	108-88-3	0.00200	< 0.00200	
Xylenes, Total	1330-20-7	0.00200	< 0.00200	

Surrogate	CAS	Result	Amount Spiked	% REC	Limits	Qual
Surr: Toluene-d8	2037-26-5	0.0491	0.05000	98.3	77-129	
Surr: Dibromofluoromethane	1868-53-7	0.0485	0.05000	97.0	80-124	
Surr: 4-Bromofluorobenzene	460-00-4	0.0491	0.05000	98.2	80-128	
Surr: 1,2-Dichloroethane-d4	17060-07-0	0.0549	0.05000	110	74-151	

American West Analytical Laboratories

D

WORK ORDER Summary

Client: EarthFax Engineering
 Client ID: EAR100
 Project: Emery / Consol
 Comments: PA Rush;

Work Order: **1201352**
 Page 1 of 1 1/25/2012

Contact: Rich White
 QC Level: LEVEL I

WO Type: Standard

[Signature]

Sample ID	Client Sample ID	Collected Date	Received Date	Date Due	Matrix	Test Code	Sel Storage
1201352-001A	H-V	1/24/2012 1130h	1/25/2012 0933h	2/3/2012	Aqueous	8260-W-PPM	<input checked="" type="checkbox"/> Purge
1201352-002A	H-L	1/24/2012 1145h				8260-W-PPM	<input checked="" type="checkbox"/> Purge
1201352-003A	I-L	1/24/2012 1210h				8260-W-PPM	<input checked="" type="checkbox"/> Purge
1201352-004A	I-BG	1/24/2012 1215h				8260-W-PPM	<input checked="" type="checkbox"/> Purge
1201352-005A	AA-V	1/24/2012 1400h				8260-W-PPM	<input checked="" type="checkbox"/> Purge

Client EarthFax
Address 7324 South Union Park Ave
Middletown VT 84047
City State Zip
Phone 801-561-1555 Fax

Contact Richard White
E-mail rwhite@earthlink.com
Project Name Emergency/Consol
Project Number/P.O.#
Sampler Name Tim Jimenez

Sample ID

H-U
H-L
I-L
I-BG
AA-U

A
AMERICAN WEST ANALYTICAL LABORATORIES
463 West 3600 South
Salt Lake City, Utah 84115

CHAIN OF CUSTODY

LABORATORIES
463 West 3600 South
Salt Lake City, Utah
84115
Fax (801) 263-8687
Email: awal@awal-l.com
(801) 263-8686
(888) 263-8686

Lab Sample Set # 1201352

Page _____ of _____

Turn Around Time (Circle One)

Fax (801) 263-8687
Email: awal@awal-labs.com

	1 day	2 day	3 day	4 day	5 day	Start
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SAVANT®



SAVANT, INC.

4800 JAMES SAVAGE ROAD
MIDLAND, MICHIGAN 48642
TELEPHONE (989) 496-2301
FACSIMILE (989) 496-3438
<http://www.savantgroup.com>
email: savant@savantgroup.com

2012 February 22

Mr. Richard White
EARTHFAX ENGINEERING
7324 S. Union Park Avenue
Suite 100
Midvale, UT 84047

Ref: EarthFax Engineering Sample ID: H-M, H-L, H-V & AA-M
Savant Sample ID: S120131D through G
Savant Lab Code: EEI01-2012-001

Dear Mr. White:

Enclosed are the test results for your sample(s) listed above which were emailed to you on February 15. Please call if you have any questions regarding the data.

We appreciate your business with Savant Laboratory.

Best regards,

Rebecca Cox

Rebecca Cox
Vice President,
Operations & Finance

sd

Enclosure



2012 February 15

EarthFax Engineering

Kinematic Viscosity ASTM D445

Customer ID:	Savant ID:	@ 40°C (cSt)	@ 100°C (cSt)
H-M	S120131D	31.29	5.278
H-L	S120131E	0.6666	*
H-V	S120131F	0.6718	*
AA-M	S120131G	31.89	5.318

* Unable to obtain viscosity at temperature

Theodore W. Selby

Director, R & D

Feb 15




2012 February 15

EarthFax Engineering

Simulated Distillation by Gas Chromatography
ASTM D6417

Customer ID:	Savant ID:	% Volatized @ 371°C
H-M	S120131D	11.0
AA-M	S120131G	11.0


Theodore W. Selby
Director, R & D

from

SAVANT ASTM D 2887 Extended

1

Sample name : S120131D
 Acquired on : 2/8/2012 11:01:51 PM Vial : 8
 Processed on : 2/9/2012 9:39:21 AM Injection : 1
 Sample type : Sample Sample (g) : 0.1059
 Method name : 2887EXTA Solvent (g) : 1.1910
 Operator : CPOR ISTD (g) : 0.0000
 Sequence name : C:\Chem32\1\DATA\d120208\S120208 2012-02-08 16-29-28\S120208.S

Data File : D120208\S120208 2012-02-08 16-29-28\008F1001.D\

General Variables

Used Blank d120208\s120208 2012-02-08 16-29-28\001f0901.d
 Used BP calibrant d120124\s120124 2012-01-25 09-22-37\002f0201.d
 Used Start elution (min) 0.213
 Used End elution (min) 32.747
 Total area 1377614

BP Distribution table - Percent

Recovered mass%	BP °C	Recovered mass%	BP °C	Recovered mass%	BP °C	Recovered mass%	BP °C
IBP	288.6	26.0	399.0	52.0	429.4	78.0	461.6
1.0	304.0	27.0	400.6	53.0	430.6	79.0	463.0
2.0	322.4	28.0	401.8	54.0	431.8	80.0	464.6
3.0	332.8	29.0	403.2	55.0	432.8	81.0	466.2
4.0	342.0	30.0	404.4	56.0	433.8	82.0	468.0
5.0	348.0	31.0	405.8	57.0	435.0	83.0	469.8
6.0	353.4	32.0	407.0	58.0	436.0	84.0	471.6
7.0	357.6	33.0	408.2	59.0	437.0	85.0	473.4
8.0	361.8	34.0	409.6	60.0	438.2	86.0	475.4
9.0	365.2	35.0	410.6	61.0	439.2	87.0	477.6
10.0	368.2	36.0	411.8	62.0	440.6	88.0	479.6
11.0	371.2	37.0	413.2	63.0	441.6	89.0	482.0
12.0	373.8	38.0	414.2	64.0	442.8	90.0	484.4
13.0	376.2	39.0	415.4	65.0	444.2	91.0	487.0
14.0	378.4	40.0	416.6	66.0	445.2	92.0	489.8
15.0	380.6	41.0	417.6	67.0	446.4	93.0	493.0
16.0	382.8	42.0	418.6	68.0	447.6	94.0	496.4
17.0	384.6	43.0	419.8	69.0	448.8	95.0	500.6
18.0	386.4	44.0	421.0	70.0	450.0	96.0	505.6
19.0	388.2	45.0	421.8	71.0	451.4	97.0	512.2
20.0	389.8	46.0	423.0	72.0	453.0	98.0	521.4
21.0	391.6	47.0	424.2	73.0	454.2	99.0	536.8
22.0	393.4	48.0	425.4	74.0	455.6	FBP	550.2
23.0	394.8	49.0	426.4	75.0	456.8		
24.0	396.2	50.0	427.4	76.0	458.4		
25.0	397.8	51.0	428.4	77.0	459.8		

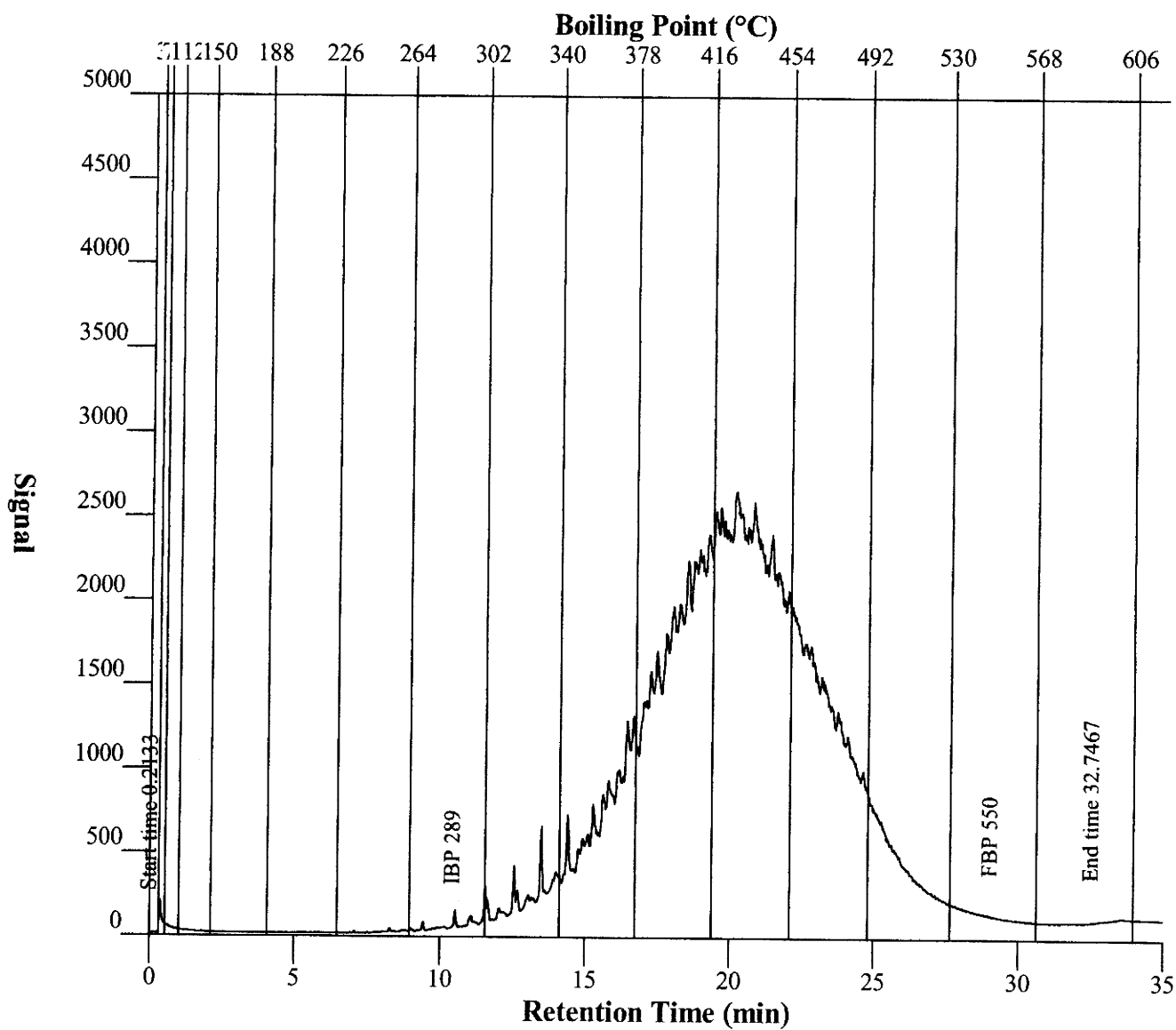
SAVANT ASTM D 2887 Extended

2

Sample name : S120131D
Acquired on : 2/8/2012 11:01:51 PM Vial : 8
Processed on : 2/9/2012 9:39:21 AM Injection : 1
Data File : D120208\S120208 2012-02-08 16-29-28\008F1001.D\

BP Distribution table - cut points

BP °C	Recovered mass%	Fraction mass%
371.0	11.0	11.0



SAVANT ASTM D 2887 Extended

1

Sample name	: S120131G	Vial	: 9
Acquired on	: 2/8/2012 11:50:42 PM	Injection	: 1
Processed on	: 2/9/2012 9:39:23 AM	Sample (g)	: 0.1025
Sample type	: Sample	Solvent (g)	: 1.2379
Method name	: 2887EXTA	ISTD (g)	: 0.0000
Operator	: CPOR		
Sequence name	: C:\Chem32\1\DATA\d120208\S120208 2012-02-08 16-29-28\S120208.S		

Data File : D120208\S120208 2012-02-08 16-29-28\009F1101.D\

General Variables

Used Blank	d120208\s120208 2012-02-08 16-29-28\001f0901.d
Used BP calibrant	d120124\s120124 2012-01-25 09-22-37\002f0201.d
Used Start elution (min)	0.200
Used End elution (min)	32.573
Total area	1492928

BP Distribution table - Percent

Recovered mass%	BP °C	Recovered mass%	BP °C	Recovered mass%	BP °C	Recovered mass%	BP °C
IBP	286.8	26.0	399.2	52.0	429.8	78.0	461.6
1.0	303.2	27.0	400.6	53.0	431.0	79.0	463.4
2.0	321.2	28.0	402.0	54.0	432.2	80.0	464.8
3.0	332.0	29.0	403.4	55.0	433.0	81.0	466.6
4.0	341.4	30.0	404.8	56.0	434.2	82.0	468.2
5.0	347.6	31.0	406.0	57.0	435.4	83.0	470.0
6.0	353.0	32.0	407.2	58.0	436.4	84.0	471.8
7.0	357.4	33.0	408.6	59.0	437.4	85.0	473.8
8.0	361.6	34.0	409.6	60.0	438.4	86.0	475.6
9.0	365.0	35.0	410.8	61.0	439.6	87.0	478.0
10.0	368.0	36.0	412.2	62.0	440.8	88.0	480.0
11.0	371.0	37.0	413.4	63.0	442.0	89.0	482.2
12.0	373.6	38.0	414.4	64.0	443.2	90.0	484.6
13.0	376.0	39.0	415.6	65.0	444.2	91.0	487.4
14.0	378.4	40.0	416.8	66.0	445.4	92.0	490.2
15.0	380.6	41.0	417.8	67.0	446.8	93.0	493.4
16.0	382.8	42.0	419.0	68.0	447.8	94.0	496.8
17.0	384.6	43.0	420.0	69.0	449.2	95.0	500.8
18.0	386.4	44.0	421.2	70.0	450.4	96.0	505.8
19.0	388.2	45.0	422.2	71.0	451.8	97.0	512.2
20.0	389.8	46.0	423.4	72.0	453.0	98.0	521.4
21.0	391.8	47.0	424.6	73.0	454.4	99.0	536.2
22.0	393.4	48.0	425.6	74.0	455.8	FBP	549.8
23.0	394.8	49.0	426.6	75.0	457.2		
24.0	396.4	50.0	427.8	76.0	458.8		
25.0	397.8	51.0	428.8	77.0	460.2		

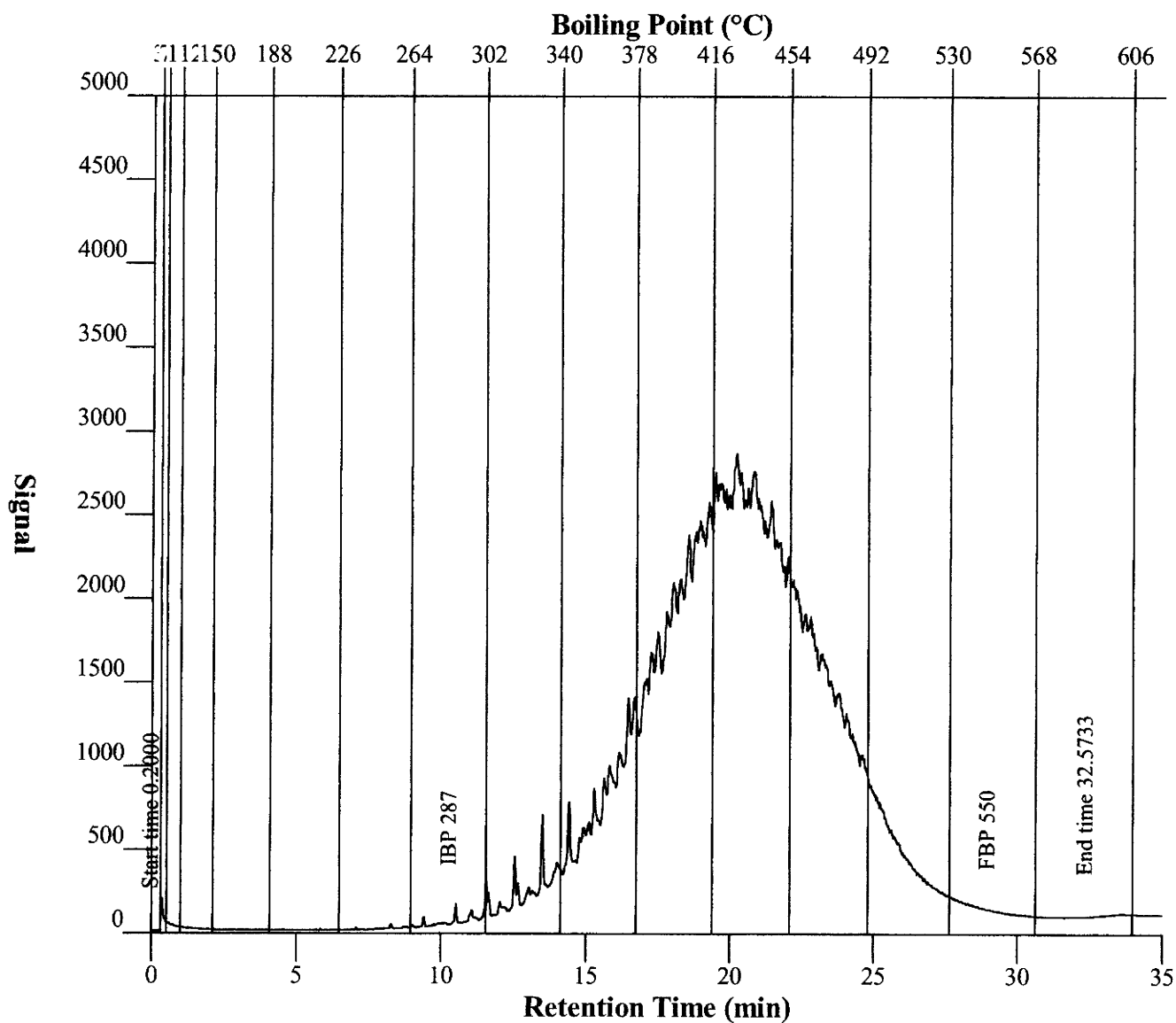
SAVANT ASTM D 2887 Extended

2

Sample name : S120131G
Acquired on : 2/8/2012 11:50:42 PM Vial : 9
Processed on : 2/9/2012 9:39:23 AM Injection : 1
Data File : D120208\S120208 2012-02-08 16-29-28\009F1101.D\

BP Distribution table - cut points

BP °C	Recovered mass%	Fraction mass%
371.0	11.0	11.0





2012 February 15

EarthFax Engineering

Elemental Analysis by ICP
ASTM D4951 (ppm)

Customer ID:	H-M	AA-M
Savant ID:	S120131D	S120131G
Silver	*	*
Aluminum	6	*
Boron	*	*
Barium	*	*
Calcium	8	18
Chromium	*	*
Copper	*	*
Iron	49	*
Potassium	*	*
Magnesium	5	*
Manganese	*	*
Molybdenum	*	*
Sodium	*	*
Nickel	*	*
Phosphorus	8	19
Lead	*	6
Antimony	*	*
Silicon	12	*
Tin	*	*
Titanium	*	*
Vanadium	*	*
Zinc	191	98

* Denotes <5

Theodore W. Selby
Director, R & D

How